

METHODS AND APPARATUS FOR MANUFACTURING OPERATIONS USING OPPOSING-FORCE SUPPORT SYSTEMS

ABSTRACT OF THE DISCLOSURE

5 Methods and apparatus for manufacturing operations using opposing-force support systems are disclosed. In one embodiment, an apparatus includes a track assembly adapted to be attached to a workpiece, and a carriage moveably coupled to the track assembly. The carriage includes a tool support adapted to receive and support a manufacturing tool. An opposing-force support assembly is operatively coupled to the carriage and is adapted to be
10 secured to the workpiece. The opposing-force support assembly at least partially counterbalances a manufacturing force exerted on the workpiece by the manufacturing tool.



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